

## FIELD OF THE INVENTION

The present invention relates to a device and a method for supplying with coating products the atomizers of an installation for spraying coating products.

## BACKGROUND OF THE INVENTION

5 It is known to supply the atomizers of an installation for spraying coating products via product circulation conduits, also known as "circulatings", from large-capacity tanks of products, whose capacity may attain several thousands of litres. Such tanks are generally located in storage premises at a distance from the spraying installations. Taking into account the usual distance between the  
10 store and the spraying installation, the products present in the circulatings during operation are of the order of several hundreds of litres, which renders it economically impossible to change products in such circulatings, as the quantities of products lost thereby are unacceptable. It is therefore necessary to provide one circulating per shade of colour used.

15 Now, the number of shades used in an installation for spraying coating products is tending to increase, which induces an increase in the number of circulating lines and increases the cost of the installation accordingly, while problems of space requirement are raised, particularly at the level of the passages through partitions.

20 The use of tanks borne on the arm of a multi-axis robot does not necessarily enable this problem to be solved. In effect, in the system known from EP-A-0 274 322, coating product circulatings are provided up to the zone of activity of the robot. In other systems, such as disclosed for example in EP-A-0 796 665, a carrousel is provided for filling cartridges with coating products  
25 but circulatings for supplying coating products are provided up to the vicinity of this carrousel for filling the cartridges.

In all cases, the permanent stirring of the coating products in the circulating leads to a degradation of their physico-chemical properties due to the mechanical stresses to which they are subjected, in particular the shear undergone at the level of the changes in direction, the pumps or the pressure regulators.

Another solution known from DE-A-197 04 573 consists in using pre-filled cartridges, which are for example disposable, but this leads to complex manipulations of a large number of cartridges, which is not economically satisfactory and renders the system of management of such an installation considerably complex.

It is a particular object of the present invention to overcome these problems by proposing a novel atomizer supply device which does not necessitate the construction of a circulating up to the vicinity of an installation and avoids the manipulation of too large a number of cartridges.

## SUMMARY OF THE INVENTION

To that end, the invention relates to a device for supplying coating products to the atomizers of an installation spraying such products onto objects displaced by a conveyor, this device comprising at least one principal tank adapted to supply secondary tanks each intended for an atomizer, and means for displacing this principal tank up to the vicinity of the afore-mentioned secondary tanks.

The principal tank or tanks make it possible to supply different secondary tanks of the installation by being displaced up to said tanks. The principal tanks may be packaged outside the factory in which the installation is employed and, in particular, in the premises of the coating product manufacturer, the principal tanks in that case corresponding to a particular packaging of the product. It then

suffices to transport different principal tanks up to the vicinity of the installation then, as a function of the coating product to be sprayed, to displace a principal tank as far as the different secondary tanks in order to supply them with coating products. No degradation of the coating product by shear occurs in the principal tank or tanks. The secondary tanks remain in the installation and it is unnecessary to manage a large number of disposable or refillable cartridges .

According to advantageous aspects of the invention, the device incorporates one or more of the following characteristics:

The or each principal tank is adapted to contain a quantity of coating product sufficient to supply the secondary tanks intended for the sprays of the installation for completely coating an object or one side of an object. In this way, a principal tank may for example enable all the sprays located on one side of the installation to be supplied with an adequate quantity of paint, without waste. In a variant, the quantity of products present in the principal tank corresponds to the complete coating of an object.

The afore-mentioned displacement means comprise at least one conveyor adapted to displace the principal tanks parallel to the direction of advance of a conveyor for displacing the objects.

The means for displacing the principal tanks are constituted by the conveyor displacing the objects to be coated.

According to a first advantageous embodiment of the invention, the principal tanks may be connected to at least one secondary tank borne by a robot and associated with an atomizer.

According to another embodiment of the invention, the device comprises at least one station for temporary storage of at least one secondary tank and means for temporary connection of a principal tank with at least one secondary